

cells are then incubated with a blocking buffer composed of 0.1 M Tris-HCl pH 7.5, 0.15 M NaCl and 0.5% of blocking reagent for 30 min. After blocking, the immunodetection is carried out for 90 min. with a peroxidase-coupled anti-digoxigenin antibody (Boehringer Mannheim, Ref. 1207733). The antibody is used at a dilution of 1/100 in the blocking buffer of the hybridization kit (TSATM Direct). The incubation is followed by 3 5-min. rinses in the TNT buffer, and then the peroxidase is detected by reacting the fluorescein-coupled tyramide for 5 min. as described by the supplier (TSATM Direct, NEN). After 3 5-min. washes in the TNT, the cells are stained with a solution of 10^{-3} µg/ml of 4',6-diamidino-2-phenylindole (DAPI) for 10 min. The slides are then rinsed in the TNT buffer, before being mounted using VECTASHIELD®, which is a fluorescence-protecting mounting product (Vector Laboratories, Ref. H-1000). The fluorescein is observed at 525 nm and the DAPI at 425 nm using a Carl Zeiss Axiophote 2 microscope equipped for indirect immunofluorescence and with a cooled camera, as specified above.

IN THE CLAIMS

Please cancel Claims 1-29 and add the following new claims:

30. (New) An isolated polynucleotide which comprises a nucleotide sequence selected from the group consisting of a nucleotide sequence which encodes a human kin17 protein which comprises the amino acid sequence in SEQ ID NO:26; a nucleotide sequence which encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 162 to 201 are deleted in SEQ ID NO:26; a nucleotide sequence which encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 55 to 235 are deleted in SEQ ID NO:26; and a nucleotide sequence which encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 129 to 228 are deleted in SEQ ID NO:26.

31. (New) The isolated polynucleotide of Claim 30, wherein the nucleotide sequence encodes a human kin17 protein which comprises the amino acid sequence in SEQ ID NO:26 and comprises the nucleotide sequence in SEQ ID NO:1.

32. (New) The isolated polynucleotide of Claim 30, wherein the nucleotide sequence encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 162 to 201 are deleted in SEQ ID NO:26.

33. (New) The isolated polynucleotide of Claim 30, wherein the nucleotide sequence encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 55 to 235 are deleted in SEQ ID NO:26.

34. (New) The isolated polynucleotide of Claim 30, wherein the nucleotide sequence encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 129 to 228 are deleted in SEQ ID NO:26 and comprises SEQ ID NO:3.

35. (New) A vector comprising the isolated polynucleotide of Claim 31.

36. (New) A vector comprising the isolated polynucleotide of Claim 32.

37. (New) A vector comprising the isolated polynucleotide of Claim 33.

38. (New) A vector comprising the isolated polynucleotide of Claim 34.

39. (New) A host cell comprising the isolated polynucleotide of Claim 31.

40. (New) A host cell comprising the isolated polynucleotide of Claim 32.

41. (New) A host cell comprising the isolated polynucleotide of Claim 33.

42. (New) A host cell comprising the isolated polynucleotide of Claim 34.

43. (New) A method for detecting a human kin17 DNA or RNA sequence in a sample, comprising hybridizing the sample with the isolated polynucleotide of Claim 30; and detecting the presence of a hybrid formed between the sample and the isolated polynucleotide.

44. (New) The method of Claim 43, wherein prior to hybridizing the sample with the isolated polynucleotide, the method further comprises extracting the DNA or RNA from the sample.

45. (New) The method of Claim 43, wherein prior to hybridizing the sample with the isolated polynucleotide, the method further comprises amplifying the DNA or RNA sequence with a pair of primers selected from the group consisting of SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, and SEQ ID NO:33.

46. (New) The method of Claim 45, wherein the pair of primers is SEQ ID NO:16 and SEQ ID NO:17.

47. (New) The method of Claim 43, wherein human kin17 RNA is detected and wherein prior to hybridizing the sample with the isolated polynucleotide, the method further comprises preparing a complementary DNA copy of the RNA by reverse transcription.

48. (New) The method of Claim 47, wherein after the complementary DNA copy is prepared and prior to hybridizing with the isolated polynucleotide, the method further comprises amplifying the complementary DNA copy with a pair of primers selected from the group consisting of SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, and SEQ ID NO:21.

49. (New) The method of Claim 48, wherein the pair of primers is selected from the group consisting of SEQ ID NOS:5 and 12; SEQ ID NOS:18 and 19; and SEQ ID NOS:7 and 16.

50. (New) The method of Claim 43, wherein the isolated polynucleotide encodes a human kin17 protein which comprises the amino acid sequence in SEQ ID NO:26 and comprises the nucleotide sequence in SEQ ID NO:1.

51. (New) The method of Claim 43, wherein the isolated polynucleotide encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 162 to 201 are deleted in SEQ ID NO:26.

52. (New) The method of Claim 43, wherein the isolated polynucleotide encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 55 to 235 are deleted in SEQ ID NO:26.

53. (New) The method of Claim 43, wherein the isolated polynucleotide encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 129 to 228 are deleted in SEQ ID NO:26 and comprises SEQ ID NO:3.

54. (New) A method of inhibiting the proliferation of a mammalian cell, comprising introducing the isolated polynucleotide of Claim 30 into the cell to express a protein encoded by the isolated polynucleotide in the cell.

55. (New) The method of Claim 54, wherein the isolated polynucleotide encodes a human kin17 protein which comprises the amino acid sequence in SEQ ID NO:26 and comprises the nucleotide sequence in SEQ ID NO:1.

56. (New) The method of Claim 54, wherein the isolated polynucleotide encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 162 to 201 are deleted in SEQ ID NO:26.

57. (New) The method of Claim 54, wherein the isolated polynucleotide encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 55 to 235 are deleted in SEQ ID NO:26.

58. (New) The method of Claim 54, wherein the isolated polynucleotide encodes a human kin17 protein which comprises an amino acid sequence wherein amino acids 129 to 228 are deleted in SEQ ID NO:26 and comprises SEQ ID NO:3.

59. (New) An isolated polynucleotide selected from the group consisting of a nucleotide sequence which encodes a mouse kin17 protein which comprises the amino acid sequence in SEQ ID NO:25, a nucleotide sequence which encodes a mouse kin17 protein which comprises an amino acid sequence wherein amino acids 162 to 201 are deleted in SEQ ID NO:25, a nucleotide sequence which encodes a mouse kin17 protein which comprises an amino acid sequence wherein amino acids 55 to 235 are deleted in SEQ ID NO:25, and a nucleotide sequence which encodes a mouse kin17 protein and which comprises an amino acid sequence wherein amino acids 129 to 228 are deleted in SEQ ID NO:25.

60. (New) The isolated polynucleotide of Claim 59, wherein the nucleotide sequence encodes a mouse kin17 protein which comprises an amino acid sequence wherein amino acids 129 to 228 are deleted in SEQ ID NO:25.

61. (New) The isolated polynucleotide of Claim 60, which comprises SEQ ID NO:2.

62. (New) A vector comprising the isolated polynucleotide of Claim 60.

63. (New) A vector comprising the isolated polynucleotide of Claim 61.

64. (New) A host cell comprising the isolated polynucleotide of Claim 60.

65. (New) A host cell comprising the isolated polynucleotide of Claim 61.

66. (New) A method for detecting a mouse kin17 DNA or RNA sequence in a sample, comprising hybridizing the sample with the isolated polynucleotide of Claim 59; and detecting the presence of a hybrid formed between the sample and the isolated polynucleotide.

67. (New) The method of Claim 66, wherein prior to hybridizing the sample with the isolated polynucleotide, the method further comprises extracting the DNA or RNA from the sample.

68. (New) The method of Claim 66, wherein prior to hybridizing the sample with the isolated polynucleotide, the method further comprises amplifying the DNA or RNA sequence with a pair of primers selected from the group consisting of SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO:32 and SEQ ID NO:34.

69. (New) The method of Claim 68, wherein the pair of primers is selected from the group consisting of SEQ ID NOS:29 and 30; SEQ ID NOS:31 and 32; and SEQ ID NOS:16 and 17.

70. (New) The method of Claim 66, wherein mouse kin17 RNA is detected and wherein prior to hybridizing the sample with the isolated polynucleotide, the method further comprises preparing a complementary DNA copy of the RNA by reverse transcription.

71. (New) The method of Claim 70, wherein after the complementary DNA copy is prepared and prior to hybridizing with the isolated polynucleotide, the method further comprises amplifying the complementary DNA copy with a pair of primers selected from the group consisting of SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, and SEQ ID NO:32.

72. (New) The method of Claim 71, wherein the pair of primers is selected from the group consisting of SEQ ID NOS:29 and 30; SEQ ID NOS:31 and 32; and SEQ ID NOS:16 and 17.

73. (New) The method of Claim 66, wherein the isolated polynucleotide comprises SEQ ID NO:2.

74. (New) An isolated polynucleotide, which comprises one or more nucleotide sequences selected from the group consisting of SEQ ID NO:4, SEQ ID NO:5, SEQ ID

NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:33, SEQ ID NO:34, a 1265 base pair fragment obtained by amplification of a kin17 nucleotide sequence with SEQ ID NO:18 and SEQ ID NO:19, and a 224 base pair fragment obtained by amplification of a kin17 nucleotide sequence with SEQ ID NO:16 and SEQ ID NO:7.

75. (New) The isolated polynucleotide of Claim 74, which comprises SEQ ID NO:4.

76. (New) A method of detecting a human or mouse kin17 nucleotide sequence in a sample, comprising amplifying the nucleotide sequence with at least two nucleotide sequences according to Claim 74; and detecting the presence of an amplification product, which is indicative of the presence of a human or mouse kin17 nucleotide sequence in the sample.

77. (New) The method of Claim 76, wherein the nucleotide sequence is amplified with two nucleotide sequences selected from the group consisting of SEQ ID NOS:5 and 12; SEQ ID NOS:18 and 19; and SEQ ID NOS:7 and 16.

78. (New) The method of Claim 76, wherein the nucleotide sequence is amplified with SEQ ID NO:16 and SEQ ID NO:17.